



## Ermanno Di Zitti

Associate professor

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### *Education and training*

1987

#### **PhD in Electronics Engineering and Computer Science**

Models and experimental techniques for the control of the dynamics in semiconductor diodes

University of Genoa - Genoa - IT

1980

#### **MSc degree in Electronics Engineering**

Th Reverse Conducting Thyristor (RCT) an example of integration in high power semiconductors - 110 cum laude

University of Genoa - Genoa - IT

### *Academic experience*

1992

#### **Associate Professor**

University of Genoa - Genoa - IT

Coordination of MSc in Electronics Engineering (2016-2018) BSc in Electronics Engineering and Information Technology (2013-2016) PhD Programme in Nanotechnologies (2006-2016)

1990 - 1992

#### **University Researcher**

University of Genoa - Genoa - IT

Engagement in different research projects

1988 - 1989

#### **Fellowship C.N.R. Progetto Finalizzato 'Materiali e Dispositivi per l'Elettronica a Stato Solido' - tema 'Architetture e CAD'**

University of Genoa - Genoa - IT

Research

1981 - 1983

#### **Fellowship ANSALDO S.p.A. on 'Modeling and simulation of semiconductor devices'**

University of Genoa - Genoa - IT

## *Language skills*

### **English**

Independent

## *Research interests*

### - MODELING AND EXPERIMENTAL TECHNIQUES FOR POWER SEMICONDUCTOR DEVICES

main achievements: determination of recombination parameters in power diodes by combining the Open circuit voltage decay technique and the Deep Level Transient Spectroscopy (DLTS) technique. Control of lifetime in electron-irradiated diodes. Design and fabrication of an automated system for the characterization of defects in silicon by DLTS. Optimization of recovery characteristics in power diodes and thyristors.

### - DESIGN TECHNIQUES OF PARALLEL VLSI SYSTEMS

main achievements: Design and realization of functional simulators. Study of architectures of special processors. Synthesis of different parallel linear algebra algorithms and neural networks onto 2-D meshes of parallel processors (Transputers).

### - NANOTECHNOLOGY

#### - Molecular circuits

main achievements: the physical limits of solid-state devices for what concern the dimension and the performance were analyzed with respect to the possibilities offered by molecular system. A functional model (cellular automaton) of a dipole monolayer was obtained taking into account the lateral interaction of electric dipole of lipids.

#### - Fabrication of self-assembled nanomaterials and nanostructures

main achievements: synthesis of gold nanocrystals, self-assembled monolayers, organic mono- and multilayers by Langmuir-Blodgett technique, fabrication of nanostructured assemblies of organic molecules. Fabrication of single-walled carbon nanotubes.

#### - Design and characterization of nanodevices

main achievements: design and characterization of sensors based on polyalchil-pyrrole molecules. Fabrication of prototypal carbon nanotube field effect transistors.

#### - Scanning Probe Microscopy

main achievement: imaging and characterization of organic and metallo-organic mono- and multilayers.